



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Aviation Rulemaking Committee
Extension of the Charter

Original Effective Date: 4/9/2015
Extension Effective Date: 6/29/2017

SUBJECT: Extension of the Energy Supply Device Aviation Rulemaking Committee

1. **PURPOSE.** This charter extends the Energy Supply Device (ESD) Aviation Rulemaking Committee (ARC), originally issued on April 9, 2015, according to the Administrator's authority under Title 49 of the United States Code (49 U.S.C. § 106(p)(5)).

The ARC has requested this extension because it is taking more time than anticipated to develop the requested recommendations due to the new and novel aspect of installing hydrogen fuel cell systems on board transport category airplanes. Extending the charter will allow the ARC to fully consider the safety aspects of its recommendations.

2. **BACKGROUND.** The aviation industry has indicated significant interest in installing hydrogen fuel cells in airplanes. A hydrogen fuel cell produces electrical energy from hydrogen and oxygen reacting. Currently, the aviation industry is conducting research and pursuing efforts to install fuel cells on airplanes because fuel cells:
- a. Are efficient sources of electric energy and produce usable water and heat as byproducts;
 - b. Could significantly reduce airplane weight, emissions of pollutant gases and noise; and
 - c. Support Europe's Clean Sky initiative.

The aviation industry has been studying, performing tests and developing prototypes to support several applications of fuel cells on airplanes. Some applications that have been discussed during industry meetings are as follows:

- a. Use the electrical energy to replace an airplane's main battery, ram air turbine and auxiliary power unit;
- b. Power equipment such as galley cookers, chillers, coffee makers, inflight entertainment systems, cargo unit load devices and medical equipment; and
- c. Use the water produced as a byproduct to reduce the need for water refilling trucks and ground support equipment.

Carrying hydrogen on-board an airplane creates safety issues that need to be understood and carefully addressed. For example, hydrogen is highly combustible and, due to its small molecular size, commonly leaks. The FAA has tasked the ESD ARC to develop a thorough understanding of the safety issues and appropriate installation requirements to support the FAA's anticipated application for a fuel cell installation.

The FAA considers hydrogen fuel cells to be a main driver in determining appropriate airworthiness standards for energy supply device installations associated with this ARC. However, FAA airworthiness standards should be written to be performance-based and should address all foreseeable energy supply device types to the greatest extent possible.

3. **OBJECTIVES AND TASKS OF THE ARC.** In accordance with the original charter, the objectives and tasks remain unchanged.

Recommendation Report. In accordance with the original charter, the ESD ARC will continue to provide recommendations.

4. **ARC PROCEDURES.**

- a. In accordance with the original charter, the procedures remain unchanged.
- b. **Status Reports.** Continue to provide a status update to the Director of the Aircraft Certification Service every 6 months.
- c. **Recommendation Report.** Submit a report detailing recommendations no later than December 8, 2017.
 - i. The Industry Co-Chair sends the recommendation report to both the Director of the Aircraft Certification Service and the Director of the Office of Rulemaking.
 - ii. The Director of the Aircraft Certification Service determines when the recommendation report is released to the public.
- d. May reconvene following the submission of the recommendation report for the purposes of providing advice and assistance to the FAA, at the discretion of the Director of the Aircraft Certification Service, provided the charter is still in effect.

5. **ARC ORGANIZATION, MEMBERSHIP, AND ADMINISTRATION.** In accordance with the original charter, the organization, membership, and administration remain unchanged.

6. **AVAILABILITY OF RECORDS.** Consistent with the Freedom of Information Act, Title 5, U.S.C., section 552, records, reports, agendas, working papers, and other documents that are made available to or prepared for or by the ARC will be available for public inspection and copying at the FAA Transport Airplane Directorate, 1601 Lind Avenue SW, Renton WA 98057-3356. Fees will be charged for information furnished to the public according to the fee schedule published in Title 49 of the Code of Federal Regulations, part 7.

You can find this extension of the charter and the original charter on the FAA Committee Database website at: http://www.faa.gov/regulations_policies/rulemaking/committees/documents/.

7. **DISTRIBUTION.** This extension of the charter is distributed to the Director of the Aircraft Certification Service, the Office of the Associate Administrator for Aviation Safety, the Office of the Chief Counsel, the Office of Aviation Policy and Plans, and the Office of Rulemaking.
8. **EFFECTIVE DATE AND DURATION.** The ESD ARC continues to be in effect upon the issuance of this extension of the charter and will remain in existence until January 31, 2018, unless this charter is sooner suspended, terminated, or extended by the Administrator.

Issued in Washington, D.C. on June 29, 2017.



Michael P. Huerta
Administrator